

**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>PG 06094WO</b>	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. <b>PCT/EP2004/007546</b>	International filing date (day/month/year) <b>09.07.2004</b>	Priority date (day/month/year) <b>19.07.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>F01P3/20, B60T1/087, F16D57/04</b>		
Applicant <b>VOITH TURBO GMBH &amp; CO. KG</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>5</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/007546

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
    - ☐ international search (Rule 12.3 and 23.1(b))
    - ☐ publication of the international application (Rule 12.4)
    - ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
  - ☐ the international application as originally filed/furnished
  - ☒ the description:
    - pages 1, 3-11 \_\_\_\_\_ as originally filed/furnished
    - pages\* 2 \_\_\_\_\_ received by this Authority on 17.05.2005 by fax
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  - ☒ the claims:
    - nos. \_\_\_\_\_ as originally filed/furnished
    - nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
    - nos.\* 1-10 \_\_\_\_\_ received by this Authority on 17.05.2005 by fax
    - nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  - ☒ the drawings:
    - sheets 1/9-9/9 \_\_\_\_\_ as originally filed/furnished
    - sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
  - ☐ the description, pages \_\_\_\_\_
  - ☐ the claims, nos. \_\_\_\_\_
  - ☐ the drawings, sheets/figs \_\_\_\_\_
  - ☐ the sequence listing (*specify*): \_\_\_\_\_
  - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - ☐ the description, pages \_\_\_\_\_
  - ☐ the claims, nos. \_\_\_\_\_
  - ☐ the drawings, sheets/figs \_\_\_\_\_
  - ☐ the sequence listing (*specify*): \_\_\_\_\_
  - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/007546

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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## 1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	1-10	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

Reference is made to the following document:

D1: US-A-2 287 130 (RAMEY) 23 June 1942  
(1942-06-23)

Document **D1** is considered the prior art closest to the subject matter of claim 1 and discloses (the references between parentheses refer to that document) a coolant circuit (figure 1) of a motor vehicle (page 1, column 1, lines 1 and 2), comprising a coolant ("water", page 2, column 1, line 33), a coolant pump (17) with a coolant outlet (11); a retarder (20), which has a stator and a central ring (44) and the working medium of which is the coolant, the central ring corresponding to that part of the working chamber of the retarder which in the flow direction of the coolant is disposed behind a coolant-conducting retarder inlet region; a reversing valve (13) in the flow direction before the retarder (20) and a bypass section (14) for bypassing the retarder (20), so that the retarder (20) can be connected to and disconnected from the coolant circuit

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/007546

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

(page 3, column 1, line 72 - column 2, line 7);  
the coolant pump (17) being arranged in the flow direction before the retarder so that it pumps coolant into the retarder (via line 20') when the retarder is connected and pumps coolant past the retarder via the bypass section (14) when the retarder is disconnected.

Document D1 differs from the subject matter of the first claim in that it does not provide any quantitative information concerning the total flow resistance from the outlet of the coolant pump (11) to the central ring (44) of the retarder, which according to the claim is less when the retarder is connected than the total flow rate resistance of the coolant circuit to be overcome in the non-braking mode.

Document D1 differs further from the subject matter of the first claim in that in document D1:

- the coolant pump, the reversing valve and the retarder are not arranged in the coolant circuit in the sequence stated in the claim when the retarder is connected, that is directly one behind the other in the direction of flow; and/or
- the stator of the retarder has only one hole (in the claim: "holes") for supplying the working chamber of the retarder with working medium.

As a result of these differences, the subject

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/007546

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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matter of the first claim is novel (PCT Article 33(2)).

A person skilled in the art of retarders would not reduce the resistance from the outlet of the coolant pump to the central ring of the retarder to below a predefined reference value (to less than, for example, the claimed total flow rate resistance of the coolant circuit in the non-braking mode) when the retarder is connected, without thereby being inventive. This is due to the fact that during braking, the retarder must generate a large degree of resistance and therefore it is not obvious to reduce the resistance (in, for example, line 20') between the coolant pump and the central ring (since that resistance, even if minimal, results in better braking power). For this reason, the subject matter of the first claim can be considered inventive.

Claims 2 to 10 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and inventive step.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/007546

## Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The application does not meet the requirements of PCT Article 6 because the subject matter of claims 1 to 3 and 8 to 10 is unclear.

- 1 Claim 1: the subject matter for which protection is sought is not clearly defined. An attempt is made to define the subject matter by the result to be achieved (a comparison of the total resistance of a sub-system during braking and the total resistance of a different sub-system in the non-braking mode). Thus only the problem to be solved is indicated, without the technical features needed to achieve that result being specified (for example how the resistances are generated). As a result, the subject matter of the claim is not clearly defined (PCT Article 6).

- 2 Claim 2: here also the subject matter for which protection is sought is not clearly defined. An attempt is made to define the subject matter by the result to be achieved (a difference in resistance of up to 30%). Thus only the problem to be solved is indicated, without the technical features needed to achieve that result being specified.

- 3 Claims 1 and 2: these claims contain the reference number "2.1 " in relation to the central ring. That number cannot, however, be found in the

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/007546

Box No. VIII Certain observations on the international application

drawings, resulting in a lack of clarity regarding the claimed central ring.

- 4 Claims 1, 3 and 8 to 10: claim 1 contains sections which overlap completely with claim 3 (1.6.1), with claim 8 (1.6.2), with claim 9 (1.6.3) and with claim 10 (1.6.4). This double claiming of the same features is confusing to the reader and results in a lack of clarity (PCT Article 6).